



Efficient Government Through Lean Six Sigma

A White Paper

November 2009

EXECUTIVE SUMMARY

Lean Six Sigma is about possessing the tools to do a better, more efficient job. It's about reducing variability, maximizing time and using data to make informed decisions. It's about creating positive culture change, encouraging input from all employees, and promoting a standard way of thinking when encountering all work processes.

The proven management philosophy that initiated within the manufacturing sector has been utilized in other industries to address business improvement needs for years. Now, county government is part of Lean Six Sigma's reach.

The University at Buffalo's Center for Industrial Effectiveness (the Center) is the prime agent making Erie County of Western New York the first large county in the United States to implement Lean Six Sigma. As a thought leader, the Center fully understands business management practices and the training and mentoring needs of the marketplace, and has become a vital component to fulfilling Erie County Executive Chris Collins' vision.

Collins, a businessman with 35 years of private-sector experience, was elected to the post on the platform that he would run county government like a business. He stepped into a government requiring an independent control board's oversight since the fiscal state was so unsteady.

Collins refers to Lean Six Sigma as a “philosophy of success” and has relied on its applications many times to eliminate waste and non-value-adding activities from his companies, as well as clean up inefficiencies to cut costs. “I knew it was going to work. It's worked so many times for me in the past.”

A carefully planned deployment model, featuring the Center's training and mentoring expertise at the forefront, is driving successes. The first round of improvement projects alone – which included improving fleet management, decreasing overtime and more - saved \$2.2 million in 2008 and is expected to produce \$2 million in 2009 savings. With subsequent waves of projects and more people being trained in the methodology, the savings will continue to grow. It is estimated that projects from 2008 until fall 2009 will save \$5 million in 2010.

Fiscal savings are complemented by department improvements. Take the Department of Mental Health, for example. Lean Six Sigma is revamping how everything is done. Commissioner Philip Endress and his staff are now asking different questions, such as: Are we adding value? Is what we do helping us to achieve our goals? If not, what do we need to do differently?



The county's Lean Six Sigma symbol is embroidered on merchandise.

Each floor of the Edward A. Rath County Office Building - the seat of county government - is stamped with slogans promoting Lean Six Sigma, the county's mission and its vision. A specially designed Lean Six Sigma symbol is attached to all forms of communication, and is embroidered on T-shirts, hats and other merchandise.

Quite simply, Collins has branded Lean Six Sigma as the way that business is done.

Lean Six Sigma is a conduit to lowering costs while still providing services that the public expects, whether it is maintaining parks or processing Medicaid applications as quickly as possible. Added up, it eases transactions between the consumer and government and lessens the tax burden on the community.

The approach is one piece in the administration's focus on making the community a global gateway.

Lean Six Sigma sends a message to entrepreneurs and businesses that contemplate investing in Erie County. Collins' "Road to a Bright Future" economic development plan spells out Lean Six Sigma's intended impact: "We will make our government a partner, not an obstacle, to the business community to help it flourish and prosper."



Lean Six Sigma is one piece of the puzzle in making Erie County a place where people want to live, businesses want to locate and tourists want to visit.

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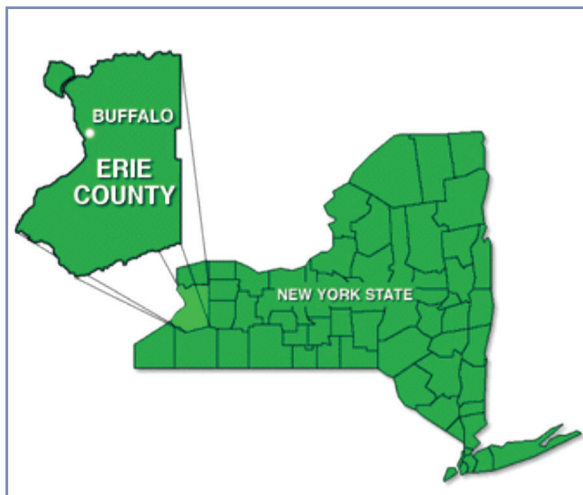
Photos and illustrations have been provided by the County of Erie and the Fort Wayne/Allen County Convention and Visitors Bureau.

VISION

In 2007, a chief executive ran for the Erie County, N.Y., executive post. Chris Collins' platform was built on three R's: reforming county government, rebuilding the economy and reducing taxes. The businessman pledged to "turn around the failed enterprise of county government."

Collins' promise resonated. He won with 64 percent of the vote. Lean Six Sigma would be the foundation for change. Every aspect of county-wide government – where local control of operations is not always a luxury – would have to be permeated. As Collins said, "You can't stick your toe in the water. You've got to jump in."

"I firmly believe my job was to shake the trees violently. Status quo's got to go," he said. "This community has been in decline for 50 years. Business as usual doesn't work."



Two years prior to the November 2007 election, the county of more than 900,000 residents, which includes the City of Buffalo, had slipped into a financial crisis when former New York state Governor George Pataki created the Erie County Fiscal Stability Authority. The authority's seven members were to oversee the county's finances, scrutinizing all expenditures that total more than \$50,000 before granting spending approval to the county.

"I firmly believe my job was to shake the trees violently. Status quo's got to go."

***County Executive
Chris Collins***

The control board's current chairperson, Robert Glaser, said the county was still trying to build a surplus in January 2008, when Collins took office. The credit rating for the county was the lowest in the state.

Not quite a year and a half after Collins' administration entered office, the members abandoned the "hard" board stance and moved to a "soft" role. No longer do they approve all contracts, hires and any borrowing. Their job is to "sit on the sidelines," as Collins said, in an advisory role.

Glaser said the move came about because Collins provided a four-year plan demonstrating the actions he would take to ensure finances are balanced. While Lean Six Sigma and its data dependency were not the sole reason behind the change, they were a contributing component.

Lean Six Sigma: The Basics

Lean Six Sigma is a rigorous, data-driven, results-oriented approach to process improvement.

“The combination of these two value-generating methodologies provides an organization with an increase in throughput experienced through Lean and Operational Excellence through the precision of Six Sigma,” said Tim Leyh, the Center's executive director.

Lean is focused on eliminating waste and non-value-adding activities from processes. Six Sigma uses a scientific rigor and a specific set of tools in problem solving to achieve breakthrough results.

Whether it's implemented within a hospital, manufacturer or government, there is no difference. All organizations need a disciplined approach to problem solving.

At the heart of Lean Six Sigma are measurement and management controls, including the DMAIC methodology. The approach is the foundation upon which Six Sigma is built, and stands for:

Defining the problem

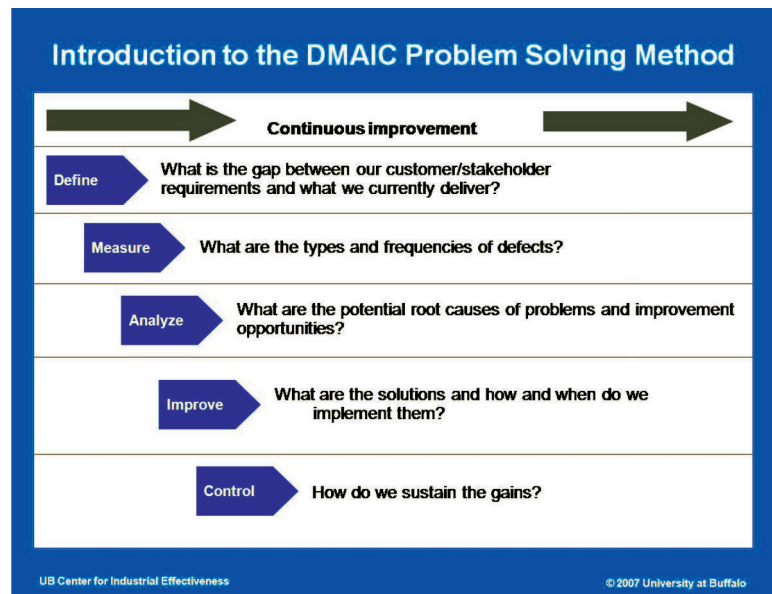
Measuring the current process

Analyzing the problem and developing workable solutions

Improving the current process

Controlling improvements for sustained results

The DMAIC method and a number of other tools and techniques are used in tackling problems caused by inefficient processes. Projects could target anything from streamlining document workflows to analyzing the cost of equipment repairs in determining a better way.



The DMAIC process is at the heart of the Six Sigma method.

Lessons from the Private Sector

Business management methodologies have been part of Collins' way of doing business for years. He has seen the value in Total Quality Management, ISO, Lean and Six Sigma at the various companies he has acquired – the majority of which were distressed and in need of major refocusing.

He credits these improvement measures for turning around 11 small- to medium-sized businesses tied to Cobblestone Enterprise LLC, a merchant bank that invests in local manufacturing companies of which he is sole investor.

Before becoming county executive, Collins tapped the Center for a number of his improvement needs, including Six Sigma initiatives in recent years. The Center is the business arm of UB's School of Engineering and Applied Sciences and is recognized worldwide as a leader in business transformation, research and development, and technical assistance. UB, a premier research-intensive public university, is the flagship institution in the State University of New York system and its largest and most comprehensive campus.

Six Sigma provided “one more tool in helping my different companies get better focused, more efficient, with improved customer satisfaction – everything you have to do today to succeed in a world economy where you've got to be efficient, have to ship on time, and have to listen to your customers.”

Applications in Government

The mayor of Fort Wayne, IN, Graham Richard, is believed to be the first official to have implemented Six Sigma in city government. He introduced it in February 2000. Since then:

- › Costs have decreased
- › Customer service has improved
- › Productivity throughout city government has increased
- › Sixty projects completed over a five-year period resulted in more than \$10 million in savings or cost avoidance for the city



Chris Collins tours Carleton Technologies.



Fort Wayne, IN, was the first city to implement Six Sigma.

While Fort Wayne undertook Six Sigma more so on the public works side, Erie County is doing that and more. With an operating budget of \$1 billion, Erie County's initiative reaches across all areas of its wide programming net.

"I knew they (Fort Wayne) had been successful. I knew they had been touting their success and, more than anything, it gave me confidence," Collins said.

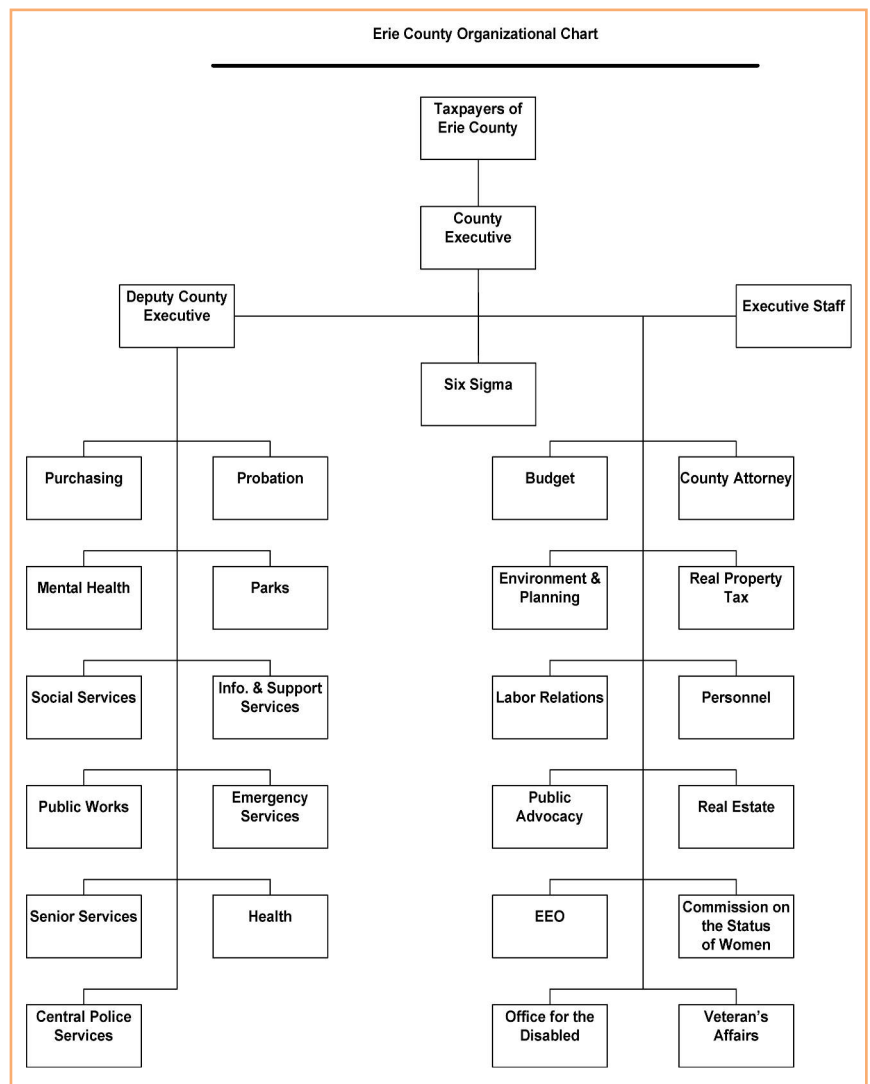
The county executive was initially met by many blank stares and the skepticism of naysayers, including everyone from county employees to control board members to the local media. Government, many said, is a bureaucracy that can never be changed. Collins pointed to companies like General Electric and Motorola, for which Six Sigma spells success, in predicting possibilities for Erie County.

DEPLOYMENT

A transition team to configure Lean Six Sigma incorporation was formed before Collins took office. Chaired by Al Hammonds Jr., the Lean Six Sigma Implementation Subcommittee was composed of county employees, a union representative, private-sector experts and Leyh of the Center.

Some were unfamiliar with the methodology, and at least one was weary and had many questions.

Civil Service Employees Association (CSEA) Downtown Section President Denise Szymura knew that union employees were worried about Lean Six Sigma's effect on their jobs. Job losses were a concern. The chief dietitian for the county also questioned the need for this specific approach.



Lean Six Sigma was institutionalized in the Erie County structure.

“I just thought that what they were trying to do could be achieved without calling it Six Sigma,” Szymura said. “It wouldn’t be done in the magnitude that Six Sigma would be done, but it could be done departmental wide if they were told to do them.”

While she admits she is not carrying the Six Sigma banner, Szymura has adopted a “wait and see” mode.

The subcommittee recommended the creation of an office of Lean Six Sigma to manage deployment. The transition team learned of the biggest issues impacting employees’ abilities to fulfill their jobs and serve the public most adequately, and determined key areas that could benefit from attention.

Devising A Plan

Hammonds, a certified Black Belt, was named Director of Six Sigma for Erie County. Collins knew he needed a full-timer to push the agenda and serve as a “full-time nag,” ensuring projects don’t fall to the backburner.

Hammonds faced the scrutiny of the fiscal control board before Lean Six Sigma’s launch. Chairperson Glaser said the board agreed with the stance of making government more accountable to taxpayers and would support Lean Six Sigma. A New York State Efficiency Grant pays for the director’s salary and benefits, as well as training of county employees. Funding has since been approved through 2010.

“The key to success is the commitment of leadership. Saying it and doing it are two separate things,” Leyh, of the Center, said. “The doing it requires funding. When funding is in place, things really take hold.”

A Request for Proposal for professional training, consultation and assistance in implementation was issued. It cites a call for changes to operational effectiveness and adopted budgets within the county’s departments and agencies, “requiring the operational processes be transparent, quantitatively explicit in terms of outcome measures, and detailed in accounting for all costs and revenue sources for each area of service delivery.”

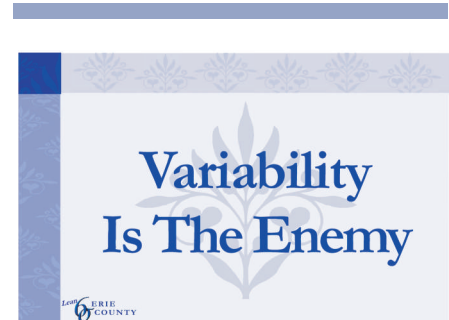
Changes were to be implemented over several phases and administered across the board. Nearly every department is being touched by at least one Lean Six Sigma project. As Hammonds explained, Erie County employs about 5,000 people in about 30 different, very diverse departments, all with unique missions. They are almost like individual businesses.



From left, Six Sigma Director Bill Carey and Deputy County Executive Al Hammonds pose in the county’s training room.

The county sought the following:

- › Executive and Champion Training: commissioners receive an overview of Lean, Kaizen (continuous improvement) techniques and Six Sigma, and the impact of using data to improve business, while also learning the importance of executive-level support in the success of any Lean Six Sigma program
- › Change Management Training: all employees are provided the knowledge and tools necessary to successfully bring about change in an organization, learning the dynamics surrounding change and ways to avoid pitfalls
- › Yellow Belt Certification Program: employees from across the departments learn about the tools of Change Management, Lean and Six Sigma, with the aim of serving as team members on Green Belt projects
- › Green Belt Certification Program: employees from nearly every government division receive training structured upon Six Sigma's DMAIC methodology, applying knowledge to conquer a specific improvement project in their department aimed at achieving a financial impact
- › Bridge-to-Black Belt Program: Green Belts seeking Black Belt certification will do so via this program, which expands skills already learned and fleshes out any training gaps



A sign hanging in the Rath Building promotes a Lean Six Sigma concept.

At the heart are the change agents – the people who are immersed in projects to improve processes. The initiative's structure includes five waves of Green Belt trainings, each with 9 or 10 people. The deployment plan called for one round each of Executive, Champion, and Bridge-to-Black Belt training, as well as multiple waves of Yellow Belt training. The plan spans three years.

Change Management is being provided by Canisius College. All other trainings are being delivered by the Center at the University at Buffalo.

Hammonds was promoted to Deputy County Executive, effective August 2008. He is succeeded by Bill Carey, who earned his Six Sigma Black Belt through the Center and is now assisted by Black Belt Andrea Shear, management projects analyst.

Management Support

Without executive-level support, most Six Sigma implementation programs fail. It starts at the very top, since extensive infrastructure and training is most effective. Upon entering office, Collins replaced 21 of the 25 commissioners and department heads with individuals who would support the new way of going about business.

The mission of the Center aligns with the core goals of Lean Six Sigma: to deliver significant and sustainable performance improvements to transform a business, improving cost, quality, delivery and safety.

“I know this hurts to take people off the line, but we're going to do it,” Collins said. “That's why the CEO has to champion the whole process or it will fall apart.”

The Center rolled out Lean Six Sigma to approximately 250 key personnel. Of those, a group of commissioners, department heads, union representatives and other staff attended a day-long introductory session. They returned later for a reinforcement of their roles in supporting the county employees involved directly in Lean Six Sigma.

Initially, Hammonds leaned on one quote when introducing Lean Six Sigma: “Learning faster than your competitor may be the only sustainable competitive advantage.”

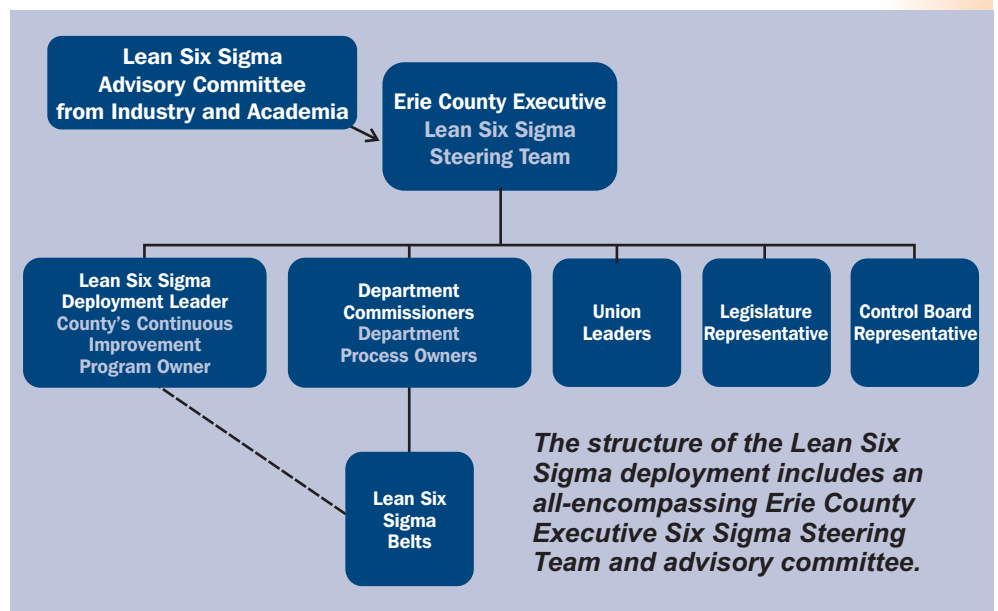
His goal was to shatter the assumption that competition has no application to government. He was lucky if he received any response to the question, “Who is your competition?” The answer was critical to jump-start the shift in thinking and eventual buy-in.

“We have had this mass exodus of people from Western New York. We need to look at ourselves as competing with other municipalities and other county governments,” Hammonds explained. “Without population, we don't have revenue.”

Steering and Advising

The Lean Six Sigma ship engages all levels of authority and incorporates as many voices as possible. “We have nothing to hide,” Carey said. “It is completely transparent.”

A steering committee is composed of Carey and all 12 commissioners and department heads. Filling out the slate are two union officers – Szymura from CSEA and a representative from the American Federation of State, County, and Municipal Employees (AFSCME) – as well as an Erie County legislator and one control board representative.



Monthly meetings focus on progress reports, analyzing successes, identifying areas in need of improvement, and looking ahead to future steps. A separate external advisory committee of up to 12 members is composed of professionals from industry and academia who are immersed in the Lean Six Sigma practice. Several members are from the original transition team. They are provided updates and offer input and suggestions based on experience.

Staying the Course

It is far too easy to pull back on a Lean Six Sigma deployment. The temptation can be strong to set aside a project for a month or more when an organization hits rough waters.

Mindy Shaw knows the dedication required. As a personnel specialist in the Personnel Department, she is a Green Belt whose project decreased the hiring process length in the county.

“It is a time commitment – a large time commitment, more so for the first project you do,” Shaw admitted, saying that Lean Six Sigma is a tool she hopes to use throughout her career. “There’s a learning curve that does take a significant amount of time.”

Collins also knows that Six Sigma often leads to taking a half-step back before going forward. “I think some companies stumble because they see the cost. The benefits don’t jump out on day 10, 30, 60 or 100.”

There are gains in Erie County despite a sour economy.

In January 2009, the comptroller predicted the county’s 2008 coffers could end with a deficit reaching \$10 million, citing softer-than-expected revenues and higher expenses.

Revenues did decrease, but the initiative helped to shave spending and a \$13 million surplus was realized at a time when governments across the state were facing deficits. It is believed that much of the surplus was a direct result of Lean Six Sigma and culture change.



Mindy Shaw, of the Personnel Department, and her team know the time required of Lean Six Sigma. They configured this Visual Stream Map in determining the amount of steps it takes to make a hire in the Department of Social Services. Her project is decreasing the time to fill a position in the department.

CULTURE CHANGE

Redirecting the course of a low-performing company hinges on turning around the poor morale of employees accustomed to losing vendors, dealing with unhappy customers and ignoring doubts in favor of forging ahead.

Addressing culture - the shared set of beliefs, attitudes and values that influence how people behave – is crucial. Organizations are unlikely to sustain long-term performance excellence without a culture that supports high performance. High-performing organizations have strong cultures, and changing the culture of any organization is typically a multi-year process.

Collins saw a government “beaten up by the press” and a basic ideology among the public that “no government employee ever earns their pay.” He viewed Lean Six Sigma as a way to build pride.

Continuous improvement is a cornerstone of the new culture. For the greatest impact, Lean Six Sigma is complemented by a culture change implementation model aimed at all county employees. It targets better training, improved information circulation and more opportunities to enhance how county operations are managed as a business.

The program reinforces both the county's vision and mission, which have been adopted in the banner of all newsletters and Web sites, and are posted on each floor of the Rath Building since Collins took office. They are:

Vision: Erie County will become a world-class community that benefits its citizens by fostering a place where people want to live and work, businesses want to invest and locate, and tourists want to visit.

Mission: The County of Erie provides a broad range of services utilizing best practice approaches that assure that the taxpayers receive value and the community achieves long term success.



Chris Collins, center, and county employees display signage and Lean Six Sigma achievements that are helping to change the culture of county government and build pride among employees.

The cultural change model is adapted from one successfully used by Xerox in the early 1980s to transform the company. County employees completed an internal assessment survey and teams were formed to address the development, implementation and monitoring of the cultural change plan which includes:

- › Behavior of management: managers must be role models for the new vision as well as champions for change
- › Communications: keeping employees informed is critical to effective empowerment
- › Recognition and reward: employees must be reinforced for contributing to the change effort and for achieving desired results
- › Standards and measures: standards are the tools and techniques that have widespread application for making improvements and solving problems (DMAIC methodology); measures are the metrics that are the best indicators of the overall health of the organization (internal assessment survey distributed annually)
- › Training: opportunities that provide the knowledge and skills required to achieve the vision, including instruction in cultural change, performance appraisal, Six Sigma, etc.

Hammonds uses the bell curve when explaining employee support of not only Lean Six Sigma, but culture change. The first goal was to create change agents through the five percent employee base that falls on the right-most side of the curve. Another five percent, on the opposite end, are those who are very vocal in their objections to change. The hope is to neutralize them.

The 90-percent majority “sit on the fence and watch the game being played. Whoever looks like they're winning, they sway that way.” The aim is convincing the middle population to follow the lead of the change agents.

“The fact that we've coupled Lean Six Sigma with a separate culture change – a necessary change - and the reward and recognition and so forth, is a reason why, 19 months in, we've had the success we've had,” Collins said.



Green Belt candidates from the first wave are congratulated for completing improvement projects and earning certification.

IN THE TRENCHES

One of the keys to deploying Lean Six Sigma and obtaining any positive impact lies in training the subject-matter experts who will learn the intimacies of the methodology and undertake projects to affect change.

It encompasses educating top-level management to line workers in varying degrees of Lean Six Sigma knowledge. Employees are involved from virtually all 30 departments, from budget to the Department of Social Services.

“People who are working in the field, doing the day-to-day grind, should have input in making the process better,” said Bill Geary, a senior highway maintenance engineer who appreciates the inclusion of various employees and not just those directly involved in a process, as can be the case with other business improvement principles.

At the core of Lean Six Sigma are improvement projects undertaken by employees who are educated in the DMAIC method through Green Belt certification and training. They receive 72 classroom hours from a Center professional Master Black Belt (MBB), who has experience in implementing and guiding hundreds of Lean Six Sigma initiatives in various sectors.

Each Green Belt candidate develops and leads a project to improve a process. Some projects have targeted:

- › reducing jail overcrowding by referring low-risk offenders to alternative measures
- › improving collection of delinquent taxes and related charges
- › decreasing length of stay in emergency shelters and accelerating placement in permanent housing for the homeless population

In addition to being mentored by an MBB, a Green Belt candidate's project team consists of: a champion (typically the commissioner of the department), a process owner (provides resources and implements the team solution), a finance representative and fellow employees, including Yellow Belts.

Geary is one such Yellow Belt. He undertook a small-scaled project that is saving the Department of Public Works \$25,000 annually by consolidating the ordering of plow truck parts. He is helping alter processes “that are outdated or incompatible with the times.” As both a long-time Erie County employee and taxpayer, he knows that change is needed.

“As I became more involved in it, I've seen the facts, the numbers, and the savings,” he said. “There are definitely ways to cut some of the fat out.”

“People who are working in the field, doing the day-to-day grind, should have input in making the process better.”

***Bill Geary,
senior highway
maintenance
engineer***

- › Anticipated 2008 savings from first wave of nine projects = \$1.3 million
- › Actual 2008 savings = \$2.2 million
- › Year-over-Year 2009 savings for the same nine projects = \$2 million

Progressive Involvement

Hammonds, department managers and commissioners pinpointed Lean Six Sigma opportunities for the first wave by examining the budget. They identified problem areas associated with big expenses and devised projects that would produce the biggest immediate financial impact and have the highest probable degree of success.

Though only a tiny fraction of the county employee base was involved and not all leaders were fully supportive in the early days, according to Hammonds, the plan exceeded initial expectations. Savings from the first wave of projects were \$2.2 million in 2008 – double what was anticipated.

Managers have hand selected many of the employees who receive Lean Six Sigma training. They tap into people who not only are interested in and capable of championing change, but possess the people skills to accompany it. Both Collins and Carey are seeing interest grow and a waiting list of volunteers who want to meet the challenge.



Green Belt candidates from the second wave are congratulated for completing improvement projects and earning certification.

Julie Saxer, a senior social welfare examiner in the Department of Social Services, volunteered to pursue a Yellow Belt after serving as a team member on a first-wave project and seeing the input that she could have.

In fall 2009, she was involved in a Department of Social Services project meant to streamline food stamp program paperwork. Saxer is motivated by her love of problem-solving and the frustration caused by errors.

“It really makes a worker happier,” she said, referring to various project implementations. “A happy worker means a more productive worker. It's easier to perform a function without having push-pull, push-pull. And I hear that from my own team.”

The progress is a departure from initial hesitancy among many employees who feared Lean Six Sigma was a threat to their job security. Management has tried to allay worries by communicating that improving the process is the target, which might lead to utilizing skills and talents in a different way.

First-wave projects fell on the easier-to-manage side of the difficulty spectrum and concentrated within one department. Each subsequent wave incorporates more complex and robust undertakings, with projects spanning one or more departments as well as branching to outside providers.

Growing Savings

Ten projects from the second wave of trainings are projected to save \$1.4 million in 2009 and \$976,000 in 2010.

Estimations for the third wave, which was rolled out in spring 2009, show a \$300,000 savings in 2009. That is expected to grow to a \$1 million savings in 2010, as time is required to complete improvements that won't truly surface until then.

Expanding beyond intra-departmental improvements is integral since the savings are larger. Many county processes cross department lines. Visibility of the complete end-to-end process makes for bigger improvements and is essential to bringing about systemic change.

Carey points to the benefits of simply gathering, in one room, parties from various departments who coordinate on a regular basis. Face-to-face interaction can unearth redundancies that are easily eliminated, “even if it's the small stuff,” as Carey said. Such encounters foster collaboration and idea generation.

Continuous Improvement

Green Belts are expected to build upon the Lean Six Sigma mindset through subsequent projects. Carey anticipates each Green Belt will continue to undertake one or two projects each year.

Sustaining Lean Six Sigma is partly dependent on broadening expertise. A select number of certified Green Belts will receive Bridge-to-Black Belt training. As Black Belts, they tackle larger, more complex project opportunities and help keep the 50 to 100 Green Belt projects per year on track. The average Black Belt project saves \$250,000.

Peter Curtis, assistant commissioner for planning and evaluation of the Mental Health Department, is among the candidates. His Green Belt project reduced the number of days criminal defendants spend in psychiatric care.

The 62-year-old could have said “no” to further training. But he sees the Mental Health Department as a very complicated, cross-interdepartmental system that needs Lean Six Sigma working from multiple angles to achieve the goals that have been set.

“My vision is that we could have true, full system projects both on the adult and child side (of Mental Health operations) that look at these critical inter-related elements of what's going on,” Curtis said. A handful of Green Belts constantly working with a Black Belt is “when you really have an impact.”

Lean Six Sigma Goes Green

Associate Environmental Quality Engineer Paul Kranz's Green Belt project in the Department of Environment and Planning turned around a “relatively dysfunctional” recycling program, resulting in a 33 percent increase in employee recycling at the Rath Building. The estimated savings for 2009 of \$18,000 is on the smaller end of improvement projects, but the county now contracts with a vendor that has controls over documents with secure information.

Protecting secure documents “certainly protects the county from significant liability from potential identity theft,” Kranz said. “I think that is a soft benefit that really can't be identified in dollars.”

IMPACT

Carey thinks the progress made because of Lean Six Sigma is “quite outstanding.” According to experts, gains should be even larger in the future since it takes four to eight years to prove a program is successful, even if cost avoidance is already surfacing.

“I know for sure that some departments are living and dreaming this stuff here. I'm very confident they will keep it,” Carey said.

The Challenges

With any organizational change, there are challenges to overcome. Skepticism, limited time, untrue rumors about Lean Six Sigma's impact, and a smaller-than-desirable initial support network for such a large undertaking are natural obstacles. Identifying the scope of some improvement projects has slowed progress in some cases.

Altering an ingrained thought process can present its own obstacles, even if everyone agrees that things need to be done more efficiently. Such is the case in the Department of Social Services.

“I think there's always that pushback in human services saying, 'We're not an industry. We don't produce a product that you can count,' which I think made it a little more difficult,” said Commissioner Carol Dankert. “I think we had to overcome that, and we still are overcoming that.”

The county has the added pressure of answering to the public and media, as well as the control board. Carey is working to strengthen the consistency and manner in which productivity and financial metrics are reported in a world where outside factors change quickly.

“It's a complex project. It really hasn't been done a lot in government, so this is new to everyone. You have to give it some time to gain traction,” Glaser, of the control board, explained. “Defining and developing metrics so you can say, 'This is successful, this isn't successful' – they're struggling a little with that.”

Changing Erie County

Still, county officials are encouraged. Lean Six Sigma is being embraced by elected officials – including the county clerk and sheriff - who are not under the jurisdiction of Collins and his initiative.



A sign hanging in the Rath Building reinforces Lean Six Sigma and its accompanying change in culture.

Some benefits are difficult to measure fiscally, such as the sharing of ideas and information. Hammonds said that employees are increasingly learning about the operations of other divisions as they collaborate more frequently because of projects.

"I wish we could capture all of the little issues that people had resolved in just the team meetings, separate from the bigger problem we were trying to solve," Hammonds said.

Gerard Sentz, the Department of Public Works commissioner, has worked for the county for nine years. He remembers when the buildings division was on one side of the office with highways on the other.

"If Highways ran out of pens, they would walk down (the hall) and Buildings wouldn't give them a pen out of their cabinet. That's how divided it was," Sentz said.

Such harsh division is no longer the case. Lean Six Sigma placed focus on teamwork and change. "Change is tough," Sentz said. "Even when you know it's good, it can be tough."

Municipal Interest

Other municipalities are taking notice. Carey receives inquiries from counties throughout New York and has even had conversations with the government in Hills Shire, Australia, which has implemented Six Sigma on a smaller scope.

Locally, Collins meets with town supervisors and village mayors on a regular basis. Some interest in Lean Six Sigma has transpired through the sharing of information.

Clarence Town Supervisor Scott Bylewski turned to the Center for its services in January 2009. Bylewski was already familiar with Lean Six Sigma before it hit the county and had been investigating its application in Clarence, a municipality of 28,700 people with a \$20 million budget.

"I'm hoping within a three- to four-year period of time that there will be a culture change – that we will be strong advocates, throughout the municipality, of Lean Six Sigma practices."

***Clarence Town Supervisor
Scott Bylewski***

The partnership with the Center has:

- schooled 20 of the approximately 100 full-time employees in Lean Six Sigma basics, of which two went on to pursue a Green Belt
- involved a volunteer business advisory group, a concept borrowed from Erie County
- pinpointed an estimated \$86,000 each year is "lost" in town facility usage through the Parks Department
- examined inefficiencies in the Community Development Department's planning process for large projects, specifically the waste spent on additional meetings and unneeded employee hours

If improvements from both projects are applied to the fullest extent, \$137,000 would be saved at minimum. Any recommendations need to be approved by the town board.

“I’m hoping within a three- to four-year period of time that there will be a culture change – that we will be strong advocates, throughout the municipality, of Lean Six Sigma practices,” Bylewski said.

Erie County's Future

No politician can guarantee the future, and neither can Collins. He may no longer hold the office of county executive in 2012, but he is confident of Lean Six Sigma's sustenance because of the deployment model's approach to immersing all levels of government.

“I think it's like a company that did not have ISO 9000 and rewrites the standard operating procedures in place and the whole organization becomes indoctrinated in it,” Collins said. “When a new CEO comes in, I think it's safe to say that ISO is part of the fabric of that corporation. You learn about it, and see the success of it, and certainly never go back to the days before it.”



The Edward A. Rath County Office Building is the seat of Erie County government, located downtown at 95 Franklin Street, Buffalo, N.Y.

SUCCESSSES AND SAVINGS

By the end of 2009, there will be 28 employees with Green Belt training who completed at least one project, saving millions of dollars and improving the manner in which business is conducted.

The projects below from the first wave of trainings are examples of gains made because of Lean Six Sigma.

Revolutionizing a Department: Department of Mental Health

Peter Curtis says that Lean Six Sigma has reshaped how the Mental Health Department sees change. Complexities seem a bit easier to swallow with different tools in hand. Rather than making decisions based on “I think this” and “I think that” - sentiments that can easily be the standard in human services - processes are starting to be decided by data and hard evidence.

Both Curtis, the department's assistant commissioner for planning and evaluation, and Commissioner Philip Endress had previous experience with other quality improvement methods. They found that the DMAIC approach completely examines an issue.

One project in the department has produced the most substantial taxpayer cost savings among county undertakings to date. Former Family Voices Network Director Marie Morilus-Black's Green Belt project on the Children System of Care:

- › diverted children in need of services from unnecessary deep-end levels of care that remove them from their families and community for extended periods
- › saved \$1.5 million in 2008 (savings for 2009 are anticipated to be almost as much)

The aim was reducing the number of children placed in residential treatment centers (RTC), which are facilities that provide among the most restrictive levels of care for children up to age 18. Many enter through the family court system, either as a Person in Need of Supervision (PINS) or juvenile delinquent.

Research shows, Endress said, that when a child is removed from the home and placed in an RTC, adjusting to society once released can be challenging and often results in a troublesome cycle that leads to the adult criminal system. There may be little or no support upon re-emerging into daily life.

The project was focused on relying more heavily upon community-based alternatives instead of RTCs and involved members of the Social Services and Juvenile Justice departments. The collaboration has led to a multi-disciplinary team that reviews and monitors all RTC placements.

Spending on Lean Six Sigma vs. Savings for 2008-2009

Erie County will spend approximately \$700,000 on Green, Yellow and Black Belt training, plus the Director of Six Sigma's salary.

Erie County savings, as a result of improvement projects, are approximately \$6 million.

Data showed that nearly half of all children who enter via the juvenile justice system are ordered to an RTC because of a probation violation. The finding led to the creation of a variety of sanctions based on the transgression.

“You violated your term of probation because you walked in the house five minutes late. That does not constitute spending \$140,000 to send you to residential treatment,” Endress said. Placement in an RTC is \$145 to \$400 per day, and the average length of stay is 13 to 14 months.

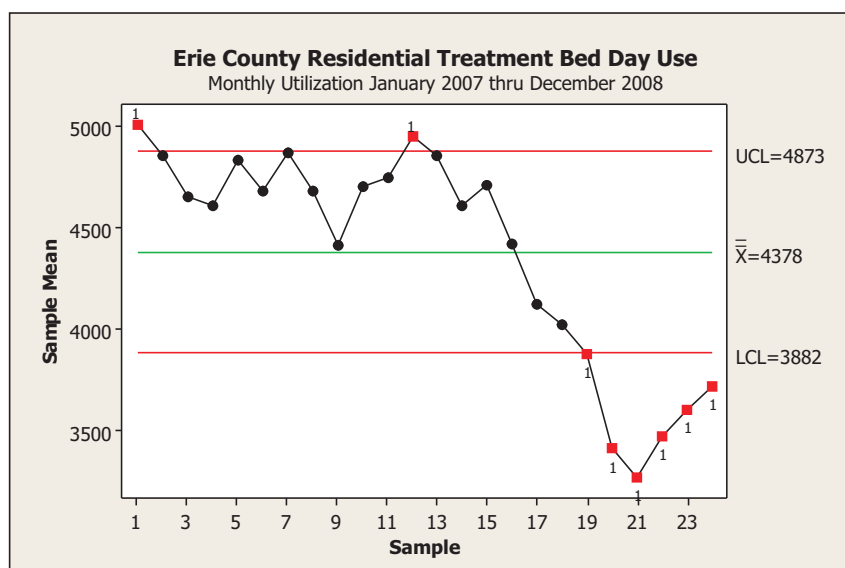
Other results of the project include:

- A new funding mechanism takes a portion of the money that would have been pumped into an RTC and reinvests it into services deemed credible and research-based.
- Performance-based contracts are being developed.
- As an incentive, the local department reimburses agencies more than a program's net costs when performance meets certain criteria.
- Those who are sent to RTCs are ordered to stay no longer than six months. Children are kept closer to home and engaged in community functions.

Endress said that national studies indicate no clinical changes emerge in children when departments collaborate to offer individualized plans, known as wraparound services. But a report from the county department suggests the contrary.

A Child and Adolescent Functional Assessment Scale examined overall functioning of children at discharge from wraparound services through such measures as behavior, moods, substance use, and school performance. It compared the first halves of 2007 and 2008 to the first half of 2009, when the department's services became more structured.

Children who demonstrated improvements after receiving services grew from 75 percent in 2007 and 2008 to 85 percent in 2009. Curtis calls the results “phenomenally impressive.”



This control chart tracks RTC bed day use on a monthly basis from January 2007 through December 2008. Improved practice, resulting from a Green Belt project, was piloted in April/May 2008, producing a statistically significant impact on bed day utilization.

Endress is so convinced of Lean Six Sigma's rigor that more of the department's 41 employees are being trained outside of the original plan. Five earned Green Belt certification at the Center through a blended learning program of web-based and classroom instruction.

The commissioner hopes that inter-departmental cooperation continues. Instead of pegging a child as a "Mental Health kid" or "Family Court kid," he sees a shift to thinking of a child in need as the responsibility of all.

Boosting Revenue: Department of Parks, Recreation and Forestry

Before October 2008, any Erie County resident interested in renting a county park shelter or building dealt with a delayed process that had been developed before the advent of societal technological gains and was never updated to benefit from Internet use.

Customers waited an average of 17 days after making a request before a permit was granted. The time between was dragged out by documentation handled in seven or eight separate notebooks, along with a back-and-forth information exchange with the Department of Parks, Recreation and Forestry.

"The process was so antiquated that no one bothered to call," said James Hornung Sr., commissioner of the department.

The tedious, manual process "hampered how many reservations you could write," which meant a loss in revenue opportunity, according to Deputy Commissioner Stan Jemiolo Jr.

A project undertaken by Jim Hart, greens keeper, has changed the face of rentals for the approximately 150 shelters and buildings at nine county parks. The following improvements all stem from the project:

- The customer's experience has been improved by chopping the reservation process to an average of four days, and even two days in some cases.
- A Web-based reservation system was created. Hornung and Jemiolo are thrilled that the online system accounted for 25 percent of requests in 2009.
- Residents may call during weekends to secure permits, which was never before an option.
- As of late September, shelter revenue for 2009 totaled \$304,140, exceeding projections by \$21,640. It was an increase of \$182,000 from 2008.

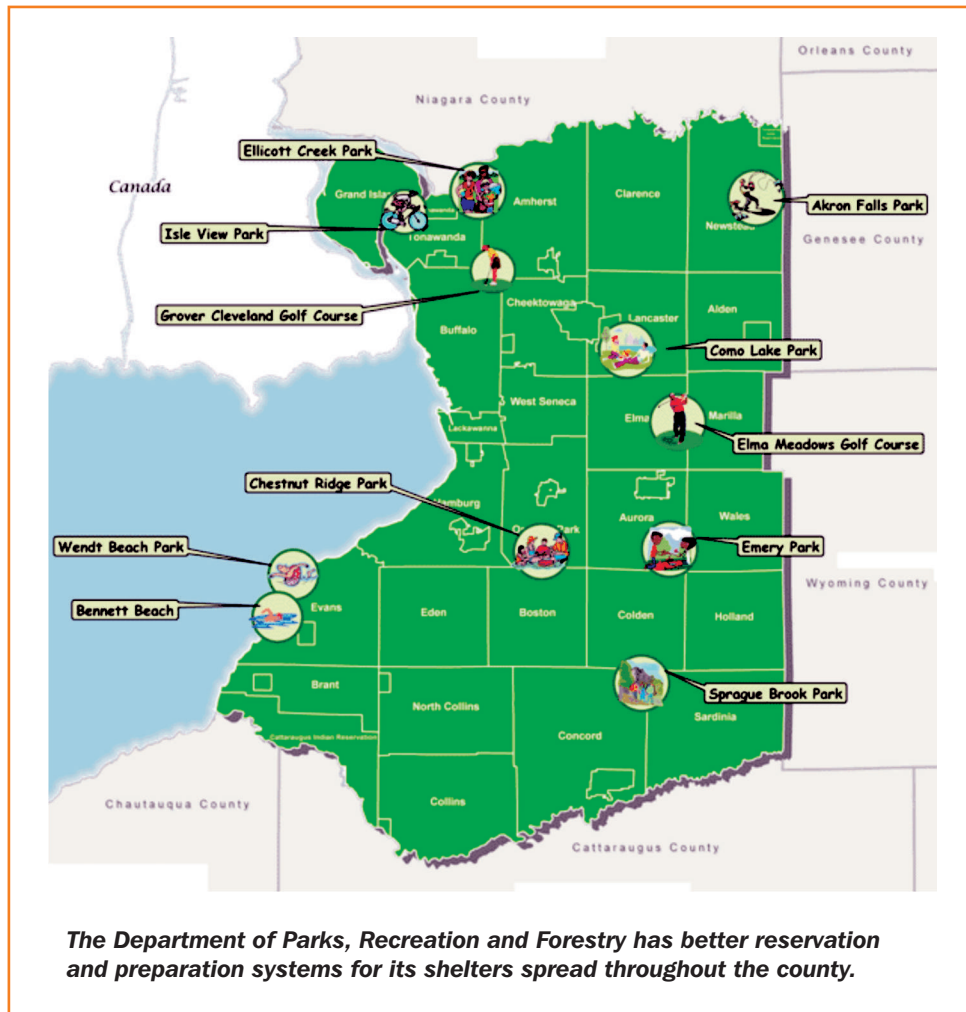
Moving into the 21st Century

Before ...

An archaic, paper-based system hampered the speed by which reservations were secured. The average amount of time was found to be 17 days.

After ...

The use of an electronic-based system has cut down on the amount of time required in verifying availability, which has resulted in a speedier process for the customer. The average amount of time is now four days.



The project also encompassed improving shelter maintenance. Preparation time was placed under the examination lens and inefficiencies were uncovered.

“Park leaders would tell staff to get in the truck and they would go north and south in the park and hit shelters as they came upon them,” Hornung said. “So, they were preparing shelters that may or may not have been rented, which meant that we were also not preparing shelters that were rented. We weren’t giving the customer a very good product.”

The team identified the time needed to prepare both a shelter and building, as well as the staffing level required based on the rentals. Park leaders have instant, up-to-date access to the reservations through a new computer system.

“As we get more people in the parks, we have to be prepared to handle more clean-up,” Hornung said. “And that’s a good problem to have.”

Better Management of Fleet and Equipment: Department of Public Works

Department of Public Works Commissioner Gerard Sentz is an engineer who naturally thinks in DMAIC process terms. When a problem arises, he analyzes the facts and often takes measures to devise a solution. Collins' Lean Six Sigma push provided time to devote to recurring issues that bogged down the department's service capabilities.

When fleet maintenance was shifted to the DPW's controls in January 2008, Sentz found a situation "screaming" for a better way. One facility only repaired cars. Another five repaired both cars and trucks. Nothing was shared, even if similar work was performed at all.

"One place has this procedure in place, and the other place has another procedure in place," Sentz said. "Yet we've never shared to say, 'You've got one part here and I've got one part here. Put them together and we've got two really good parts.'"

Green Belt candidate Gary Zawodzinski, deputy commissioner of highways, reached out to other departments in the quest to improve the sharing of equipment and vehicles, so that spending would be decreased in rentals, equipment downtime and outside repairs. Also examined were auto repair supply expenditures in all departments. Project results include the following:

- The fleet maintenance center was closed. All fleet maintenance is completed at the highway barns, two of which have become the main repair facilities. Minor work is still performed at all five highway repair facilities.
- Reliance on outside vendors has decreased significantly, after costs for paying a dealer were compared to paying the county's own employees. Most repairs, including collision work, are now completed internally. Some items are still sent out, based on cost and involvement required.
- Employees survey department procedures more consistently and make appropriate modifications. For example, employees were driving their own cars to and from Albany. Data showed that it is cheaper to rent a car than to be reimbursed for mileage. Add in non-tangible issues, such as safety of a new rental car, and a new travel policy was developed.

Zawodzinski's official project ended in October 2008, but tracking continues. Repairs and associated billing are documented, the inventory is constantly being scrutinized for possible reduction, and gasoline usage is monitored on a monthly basis.



Mechanics from the Department of Public Works have a better handle on maintaining the county's fleet.

Cost avoidance

From May 1 to August 19, 2008, more than \$57,000 was saved by doing work internally, rather than paying for outside labor and parts.

The goal is to save 25,000 gallons of fuel in 2009 through proper management and accountability. Department heads are provided a monthly report to manage fuel usage and accommodations are made if the budget is exceeded.

In the Parks Department, Jemiolo undertook a similar improvement project as a Green Belt candidate, seeking to reduce the costs and spending associated with parts, inventory and outside contracting. It encompassed taking on more repairs internally; completing an inventory of equipment to replace an inadequate tracking system; instituting a new maintenance program and daily morning preventative maintenance checklist; and putting in place protocols when repair is needed.

Jemiolo points out that the benefits go beyond the cost savings of \$131,000.

“By getting that lawn mower back faster or having it break down less, it gets us to keep the parks in better shape,” he said. “The whole point is that Parks is customer service. Parks is about supplying recreation to the public, who work hard all week.”

Cutting Overtime by Streamlining a Process: Department of Social Services

Between 2005 and 2008, overtime hours in the Department of Social Services more than tripled, from \$205,135 to \$685,539 due largely to staff cutbacks and an increase in people applying for benefits because of a worsening economy.

Shaun Hughes' task as a Green Belt candidate was determining how to make the application process more efficient in one of the largest problem areas – Temporary Assistance - so more work would be completed without increasing workers' time on the job. Completing work more quickly also means issuing benefits in a more timely fashion.

Hughes, an administrative director, and her team unveiled 137 steps from the moment an application is begun to the time a client is granted benefits. Hughes' project focused solely on case preparation, interviews and writing of the application.

“The complexity around Temporary Assistance is daunting,” said Carol Dankert, commissioner of the department. “For these workers who don't do a (specific) task for a couple of weeks, it's an awful lot to remember.”

Time to complete a Temporary Assistance application

Before ...
An average of 3.11 hours

After ...
An average of 2.56 hours and decreasing, as subsequent projects are targeting different parts of the process

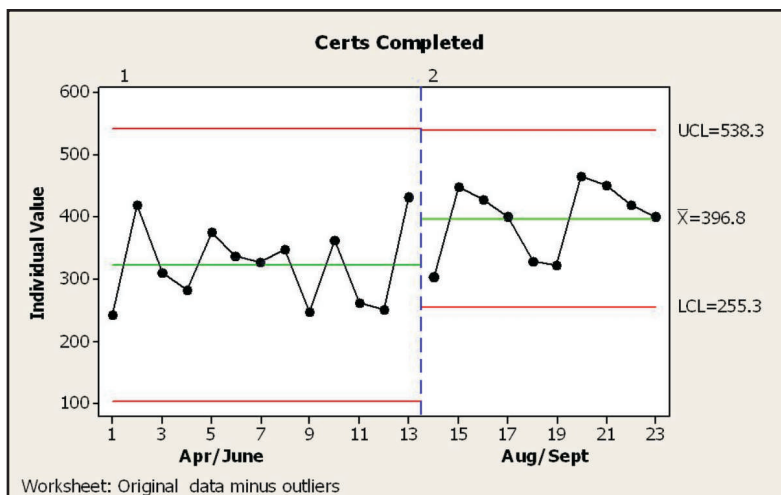
Cutting time by 30 minutes resulted in fewer overtime hours and a savings of nearly \$30,000 in 2008

A handful of core areas were identified for improvement, including:

- Desk aids were developed to help workers with complicated tasks, which contain codes and reference information. Training guides are also now in place and used when training new workers. “I was really happy because someone stopped me in the hall the other day and told me she loved the desk aids – absolutely loved the desk aids. I just wanted to hug her,” Hughes said.
- Workers no longer prepare prior to clients' scheduled interview appointments. Too much time was being wasted on no-shows. As Hughes explained, “If the client doesn't show up, you just deny the application.”
- Changes have been made to reduce the potential for interruptions during an employee's write-up times. Interruptions can extend a task by almost 40 percent.
- A training was designed to help community advocates better understand their role. “If the advocate comes in prepared, the worker doesn't need as much time to get information,” Hughes said. “Everything works a lot smoother when the advocate knows exactly what to do.”

“I was really happy because someone stopped me in the hall the other day and told me she loved the desk aids – absolutely loved the desk aids. I just wanted to hug her.”

**Shaun Hughes,
Department of
Social Services
administrative director**



The average number of Temporary Assistance applications completed per week increased per Group 1 (on left) from 323 per Group 2 (on right) to 397.

Hughes now thinks in terms of waste and expenditures. Her innate sense of wanting to improve the department is now accompanied by a process. She thinks that her Wave 1 project could spiral into a few years' worth of Six Sigma projects.

“One of the benefits of the Six Sigma model is that you then have folks who are trained and skilled and comfortable with the tools,” Dankert said. Continually broadening training's reach “changes the culture of the agency. You look at things with a different lens.”

Expansion of the Lean Six Sigma way continues with staffers like Senior Program Support Specialist Michelle Schaffer, who is part of the Green Belt wave that began in spring 2009. Her project focuses on reducing a nearly 50 percent error rate associated with a document used to authorize changes to existing cases.

Schaffer foresees the project having a huge impact because it can be applied in other divisions within the department. A pilot program rolled out to two employees each week was met with increasing enthusiasm as employees realized its effectiveness.

"We were anticipating some resistance from some of the old-timers, but the workers have been extremely positive because it makes their day go better," Schaffer said. "You're not coming back to your desk to a stack of errors."

Revamping of Policies and Procedures: Department of Health

Patricia Devine's initial reactions to Lean Six Sigma were not favorable. "Just more work," were her thoughts.

But after serving as a process owner, the program manager of Women's Health says that she is definitely in favor of the improvement process. She sees how the support of upper-level management has, in turn, rewarded the Health Department's efforts by providing extra resources that weren't there before.

Health Commissioner Dr. Anthony Billittier indicated that quality improvement is nothing new in the department. Lean Six Sigma is taking things a step further by providing a framework that is establishing a culture change.

Grant Writer Amy Rockwood's project dealing with the Family Planning Benefit Program, according to Billittier and Devine, has changed the clinic's culture for both employees and patients. The goal of increasing the number of eligible patients enrolled in the Family Planning Benefit Program was not only met, but improvements have led to a morphing of some tasks and responsibilities.

"We found the staff was dying to have procedures. They wanted definition, and wanted things thought out," Devine said in regard to the Medicaid program. "We were able to respond because they really needed to understand how to do this. They needed clarity."

Family Planning Benefit Program enrollment among eligible clients equates to the county receiving reimbursement for family planning services rendered. And that means freeing up grant money for other needed services, which would have otherwise been gobbled up.



Because of an improvement project, more clients are enrolling in the Family Planning Benefit Program, which means reimbursement of services for the county.

The challenge was getting the patients who qualify – the uninsured who meet income guidelines – to fill out the paperwork. By law, the county has to provide family planning services at no cost.

There was no incentive for patients to complete the insurance application. And, as Billittier said, “At one point, nobody was.”

Devine explained that not enough emphasis was placed on marketing the application to clients. When it was, often times it was not processed correctly within the 10-day window.

“I don't think we took it seriously enough to make sure that all of the little nooks and crannies were designed properly to make sure it was successful,” she said.

Devine said that it took months of inordinate work before success came about in the form of the following:

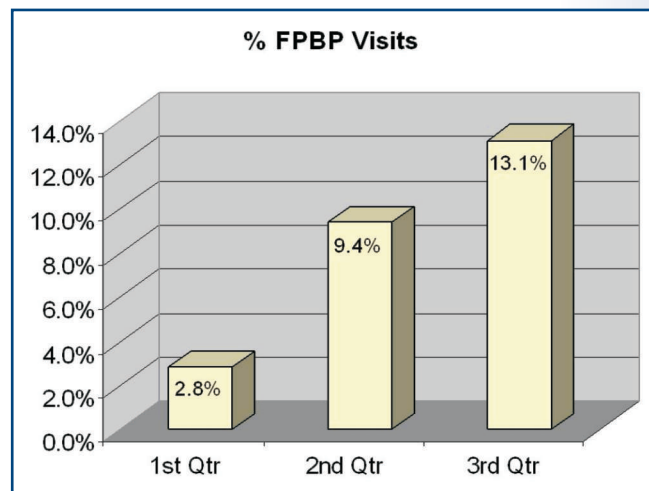
- Certain sections are now highlighted on the cumbersome application and needed information was clarified to reduce confusion.
- Time and duties among employees were reorganized as a result of the program becoming a weekly agenda item at meetings.
- Every procedure associated with the program was rewritten.
- Implementation required a “total redesign” of the front desk staff. The staff has been trained in how to better communicate with clients so that they understand requirements of the application process. Changing a culture of patients who are not accustomed to supplying documentation was perceived as a challenge itself. But Devine said that clients are complying, with some reinforcement from staff members.

During the first quarter of 2008 before the project was undertaken, 2.8 percent of visits were covered by the program. By the third quarter, when changes had been implemented, it rose to 13 percent.

Revenues were close to \$80,000 for 2008. Already by the end of August 2009, Family Planning Benefit Program revenues stood at \$95,000.

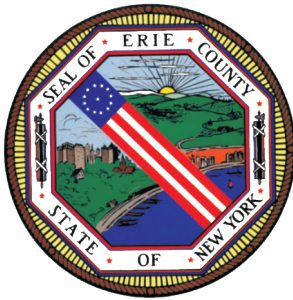
“We found the staff was dying to have procedures. They wanted definition, and wanted things thought out.”

***Patricia Devine,
program manager of
Women's Health***



At the beginning of 2008, less than 3% of the clinic visits were paid by the Family Planning Benefit Program (FPBP). At the end of the 3rd quarter, more than 13% of visits were being paid by FPBP. There was more than a four-fold increase in the number of FPBP visits since the beginning of the year.

ABOUT THE ORGANIZATIONS



Erie County is a metropolitan center located on the western border of New York state, covering 1,058 square miles. Located within the county are three cities and 25 towns, including the City of Buffalo, the second-largest city in the state, which serves as the county seat. The Bureau of Census statistics indicate a population of 950,265 in 2000. The County Executive, elected to a four-year term, is the chief executive officer. The County Legislature, consisting of 15 members elected to two-year terms, is the county's governing body.

Erie County's Road to a Bright Future is an Economic Development agenda focused on 10 key economic areas that capitalize on Erie County as a Global Gateway Community bordering Canada. Erie County is located at the center point of a mega region stretching from Toronto, through Southern Ontario, to Rochester, Syracuse, and up to Ottawa and Montreal. Home to 22 million people and \$530 billion of economic output, this mega region is the fifth largest in North America. The vision for Erie County is to become a world class community where people want to live, businesses want to locate, and tourists want to visit.

Erie County's Road to a Bright Future





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The Center is a member of the University Economic Development Association (UEDA). The UEDA named the Center a 2009 winner for the "Award of Excellence in Workforce Development," which recognized the Center's project with Erie County.

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